

Appl. No. 10/713,526

Amendment dated June 23, 2005

Response to Office Action Mailed March 29, 2005

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) A transponder for a tire condition monitoring apparatus that detects condition of a tire and wirelessly transmits data representing the detected condition in response to radio waves having a field intensity equal to or greater than a predetermined level:

wherein the transponder is provided in a tire valve attached to a wheel upon which the tire is mounted, such that the transponder is embedded in the tire;

wherein the transponder includes:

a condition detecting device for detecting a condition of the tire;

a coil antenna, which is induced by radio waves having a field intensity equal to or greater than a predetermined level to generate electricity; and

a casing, the casing having an accommodating portion that accommodates the coil antenna and a projecting portion projecting into the tire from the accommodating portion, the projecting portion accommodating the condition detecting device;

wherein, based on the electricity induced by the coil antenna, the transponder detects condition of the tire with the condition detecting device and wirelessly transmits data representing the detected condition.

2-3. (Canceled)

4. (Currently Amended) The transponder of a tire condition monitoring apparatus according to claim [[3]] 1, further comprising:

a pair of annular magnetic plates, wherein the magnetic plates are each provided on one of an outer circumference and an inner circumference of the coil antenna, respectively.

5. (Currently Amended) The transponder of a tire condition monitoring apparatus according to claim [[3]] 1, further comprising:

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a pair of annular magnetic plates, wherein the magnetic plates are each provided on one of axial end faces of the coil antenna, respectively.

6. (Currently Amended) An apparatus for monitoring condition of tires of a vehicle, the apparatus comprising:

a transmitter-receiver that transmits radio waves having a field intensity equal to or greater than a predetermined level at a predetermined timing; and

transponders, wherein each transponder is provided in one of the tires;

wherein each transponder includes:

a pressure sensor for measuring the air pressure of the corresponding tire; [[and]]

a coil antenna, wherein, when receiving the radio waves, the coil antenna induces electricity for activating the pressure sensor, and transmits the air pressure data measured by the pressure sensor; and

a casing, the casing having an accommodating portion that accommodates the coil antenna and a projecting portion projecting into the tire from the accommodating portion, the projecting portion accommodating the condition detecting device;

wherein, based on the electricity induced by the coil antenna, the transponder detects condition of the tire with the condition detecting device and wirelessly transmits data representing the detected condition.

7. (Canceled)

8. (Original) The tire condition monitoring apparatus according to claim 6, wherein a pair of annular magnetic plates are provided for each transponder, wherein the magnetic plates of each transponder are each provided on one of an outer circumference and an inner circumference of the corresponding coil antenna, respectively.

9. (Original) The tire condition monitoring apparatus according to claim 6, wherein a pair of annular magnetic plates are provided for each transponder, wherein the magnetic plates of each transponder are each provided on one of axial end faces of the corresponding coil antenna, respectively.

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10. (New) The tire condition monitoring apparatus according to claim 1, wherein the condition detecting device is a pressure sensor, and wherein the projecting portion has a hole through which the pressure sensor measures air pressure in the tire.

11. (New) The tire condition monitoring apparatus according to claim 10, wherein the projecting portion extends parallel to an axis of the coil antenna.

12. (New) The tire condition monitoring apparatus according to claim 6, wherein the projecting portion has a hole through which the pressure sensor measures the air pressure in the tire.